Tamkang University Academic Year 113, 1st Semester Course Syllabus

Course Title	CALCULUS	Instructor	CHEN, HUNG-YIN
Course Class	TLAXB1P DEPARTMENT OF ACCOUNTING, 1P	Details	◆ General Course ◆ Required ◆ 1st Semester ◆ 2 Credits
Relevance to SDGs	SDG4 Quality education		

Departmental Aim of Education

Ⅰ. Acquisition of professional knowledge.

Ⅱ. Learning effective self-planning.

Ⅲ. Theoretical application of practical matters.

Ⅳ. Interpersonal communication and teamwork.

Ⅴ. Analysis of problems and recommendations.

Ⅵ. Awareness of Ethics as a global citizen.

Subject Departmental core competences

A. Students can demonstrate that they have program basic knowledge of business and management.(ratio:40.00)

B. Students can demonstrate that they have capability in professional knowledge expression. (ratio:10.00)

C. Students can demonstrate that they have capability in using information technology. (ratio:10.00)

D. Students can demonstrate that they are critical thinkers.(ratio:40.00)

Subject Schoolwide essential virtues

1. A global perspective. (ratio:5.00)

2. Information literacy. (ratio:20.00)

3. A vision for the future. (ratio:10.00)

4. Moral integrity. (ratio:15.00)

5. Independent thinking. (ratio:30.00)

6. A cheerful attitude and healthy lifestyle. (ratio:5.00)

7. A spirit of teamwork and dedication. (ratio:10.00)

8. A sense of aesthetic appreciation. (ratio:5.00)

Course Introduction	This course introduces the theory of the Calculus, the calculation approaches and its applications. The contents include the (1) functions, graph of function, and limit, (2) differentiation and its applications, (3) exponential and logarithmic functions and their derivatives and so on. We aim to improve students' interests in learning and to develop their thinking and computing abilities.

The correspondences between the course's instructional objectives and the cognitive, affective, and psychomotor objectives.

Differentiate the various objective methods among the cognitive, affective and psychomotor domains of the course's instructional objectives.

I. Cognitive : Emphasis upon the study of various kinds of knowledge in the cognition of the course's veracity, conception, procedures, outcomes, etc.

II.Affective : Emphasis upon the study of various kinds of knowledge in the course's appeal, morals, attitude, conviction, values, etc.

III.Psychomotor: Emphasis upon the study of the course's physical activity and technical manipulation.

No.	Teaching Objectives	objective methods
1	1. Understand the concepts of the limits and the continuity of a function. 2. Understand the theory and applications of the derivatives and be able to do the calculation and curves graphing in practice. 3.Understand the differentiation of exponential and logarithmic functions and their applications.	Cognitive

The correspondences of teaching objectives : core competences, essential virtues, teaching methods, and assessment

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABCD	12345678	Lecture, Discussion	Testing, Study Assignments, Discussion(including classroom and online)

Course Schedule

Week	Date	Course Contents	Note
1	113/09/09 ~ 113/09/15	1.1: Functions; 1.2: The Graph of a Function	

2	113/09/16 ~ 113/09/22	1.3: Linear Functions; 1.4: Functional Models	
3	113/09/23 ~ 113/09/29	1.5: Limits; 1.6: One-Sided Limits and Continuity	
4	113/09/30 ~ 113/10/06	2.1: The Derivative; 2.2: Techniques of Differentiation	
5	113/10/07 ~ 113/10/13	2.3 Product and Quotient Rules; Higher-Order Derivative	
6	113/10/14 ~ 113/10/20	2.4: The Chain Rule	
7	113/10/21 ~ 113/10/27	2.5: Marginal Analysis and Approximations Using Increments; 2.6: Implicit Differentiation and Related Rates	
8	113/10/28 ~ 113/11/03	3.1: Increasing and Decreasing Functions; Relative Extrema	
9	113/11/04 ~ 113/11/10	Midterm Exam/Midterm Assessment Week (teachers can adjust the week as needed)	
10	113/11/11 ~ 113/11/17	3.2: Concavity and Points of Inflection	
11	113/11/18 ~ 113/11/24	3.3: Curve Sketching	
12	113/11/25 ~ 113/12/01	3.4: Optimization	
13	113/12/02 ~ 113/12/08	3.5: Elasticity of Demand, Additional Applied Optimization	
14	113/12/09 ~ 113/12/15	4.1: Exponential Functions; Continuous Compounding	
15	113/12/16 ~ 113/12/22	4.2: Logarithmic Functions	
16	113/12/23 ~ 113/12/29	4.3: Differentiation of Exponential and Logarithmic Functions	
17	113/12/30 ~ 114/01/05	Final Exam/Final Assessment Week (teachers can adjust the week as needed)	
18	114/01/06 ~ 114/01/12	Flexible Teaching Week: Generally, no in-person classes; teachers may arrange teaching activities or final assessments, among other options.	
Key capabilities		self-directed learning Problem solving	
Interdisciplinary		STEAM course (S:Science, T:Technology, E:Engineering, M:Math, A field:Integration of Art and Humanist)	

Distinctive teaching	
Course Content	Logical Thinking
Requirement	
Textbooks and Teaching Materials	Using teaching materials from other writers:Textbooks Name of teaching materials: Calculus for Business, Economics, and the Social and Life Sciences, 11th ed. Hoffmann Bradley, Sobecki Price, ISBN: 978-986-96141-9-1
References	
Grading Policy	◆ Attendance： 10.0 % ◆ Mark of Usual：5.0 % ◆ Midterm Exam： 30.0 % ◆ Final Exam： 35.0 % ◆ Other〈(TA Course)〉：20.0 %
Note	This syllabus may be uploaded at the website of Course Syllabus Management System at http://info.ais.tku.edu.tw/csp or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at http://www.acad.tku.edu.tw/CS/main.php . **※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.**